***Genista tinctoria in vitro* – the affecting of secondary metabolites production**

Elicitation is one of the methods that can be used for increasing secondary metabolites production in *in vitro* cultures. The present study investigates the effect of 6, 12, 24, 48, 72 and 168-hours lasting elicitation by two elicitors - substance A (*N*-(3-iodo-4-methylphenyl)pyrazine-2-carboxamide) and substance B (5-*tert*-butyl-6-chloro-*N*-(3-iodo-4-methylphenyl)pyrazine-2-carboxamide) on the isoflavonoids production in the callus cultures of *Genista tinctoria*. The cultures were cultivated on Schenk-Hildebrandt medium with addition of 0,5mg/l 2,4-dichlorophenoxyacetic acid a kinetine in concentration 0,1 mg/l. The isoflavonoids content was determined using HPLC. The maximal content of genistin was detected after 6-hours elicitation with substace A at concentration $c_{A\ 2}= 2{,}95 \cdot 10^{-4}$ mol/l, the production was increased about 3200%. Within using substance B the maximal increase of genistin was detected after 12-hours lasting impact of concentration $c_{B\ 1}=2{,}33 \cdot 10^{-3}$ mol/l (by 5640%). Generally higher production of isoflavonoids was proved when substance A was used.